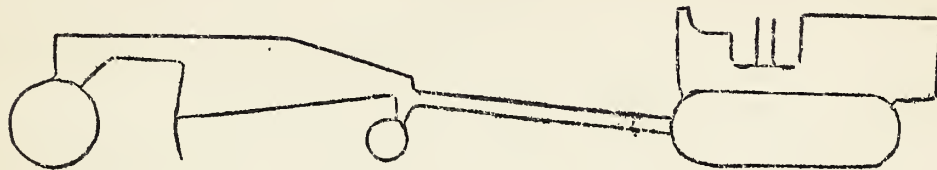


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CONSTRUCTION



HINTS

UNITED STATES DEPARTMENT OF AGRICULTURE, FOREST SERVICE

Vol. 1

Washington, D.C.

September 21, 1935

No. 10

The following was taken from "Northern Region News" of July 6th and August 21st:

A tool grinder has been developed in the Missoula Engineering Shop which should be of particular advantage to any Forest having a lot of tool grinding to do, as practically any hand tool can be sharpened on it.

Eighteen gasoline motors, size $3/4$ h.p., were received in equipment transfers from California. These were equipped with grinder heads with two-wheel emery stones on them. Using these motors, grinding outfits are being built up on angle-iron frames, each outfit consisting of two grindstones $2\frac{1}{2}$ " by 18", and two 10" emery wheels. The motor speed is 1700 r.p.m., the emery grinders run at 2800 r.p.m. and by using reduction pulleys and belts, the grindstones are made to turn at 80 to 90 r.p.m. Eighteen of these ECW outfits will be available by July 15 and will be sold to the Forests at cost, approximately \$65 each. Fifteen have already been ordered by the Forests. If the need develops, more units will be constructed, but the cost will be \$175 for additional ones as motors will have to be purchased.

Since that time, a Curtis air compressor, size $2-1/8$ " x $2-5/8$ ", has been added to the unit to use in pumping up tires to as high as 150 pounds pressure. When grinding tools, hook up one belt; when putting air in a tire, hook up another belt and unhook the belt from the grinder. Two men can grind tools at one time with power to spare. Thirty or forty pounds of air can be put into a tire in five minutes and this feature should be of great convenience at points where there is centralization of motor vehicles.

The units now on hand are all sold, but additional units will be built up if ordered or, if any Forest has a one-horse power motor and mandrel, these can be built up in the Missoula shop into a grinder unit with compressor attachment.

--G. W. Duncan.

SALT FOR AN EXHAUSTED BODY
from Northern Region News of July 6, 1935.

Salt is the "spice of life" in more ways than one, according to medical men. It is a stimulator for fagged and perspired bodies. Its application in drinking water revives tired muscles. It replaces the chlorides lost through perspiration.

Here is what Lt. Col. H. H. Hammel, M.D., has to say about it in an article in Sports Afield, 1934-35 Hunting Annual:

"...After a long climb or a strenuous exertion, the hunter is very apt to be covered with perspiration, pulse rapid, breathing deep and rapid, skin hot to the touch or even cold and clammy. Many look as though they are ready to drop in their tracks, yet keep going....

"In plain language, the reason for this thirst and exhaustion is this: the body fluids contain a certain amount of salt. During excessive physical exertion, when the hunter persists in drinking often and large quantities, the salt content of the body is lost in the perspiration, and the loss of salt and water is so great in some cases, that there is a definite decrease of blood volume. This, when carried to the extreme, for example when climbing for sheep and goat, is very apt to cause a medical shock.

"Now this undesirable condition can be prevented, to a certain extent, by supplying the body with salt. When drinking while hunting, a teaspoonful of salt to each quart of water in the canteen will do the trick. During strenuous physical exertion only small amounts of water should be taken and at not too frequent intervals."

H. R. Offord, Agent for the Bureau of Entomology, in letter to Mr. Frank O. Walters of the Forest Service at Sandpoint states:

"I have looked up reference to this in the literature of industrial hygiene, physiology, and medical records, and find that the use of salt in drinking water is a recognized and proven therapeutic practice. The function of salt is to replace the chlorides lost through excessive perspiration. Men engaged in heavy muscular activity under conditions of high temperatures and relatively low humidity have used salt in this manner to reduce muscular fatigue and the quantity of water imbibed.

"I shall give you my interpretation of the available data and then furnish you with the references and abstracts upon which I have based my recommendations in order to permit you or anyone else to evaluate them.

"The salt may be taken in solution or in tablet form. It may be added to drinking water in amounts to make a 0.25 to one percent solution, or it may be taken in tablet form in doses of 16 grains (one gram) along with a drink of water. It is my belief that the use of salt in tablet form represents the more practical way of handling the salt under field conditions for the following reasons:

- "1. It will avoid measuring out small doses of salt into canteens or water bags.
- "2. It will avoid any tendency to increase thirst because of the salty taste of the water.
- "3. The quantity of water needed will be reduced to a minimum.

"The 16-grain tablets are made by McKesson-Hall Van Gorder Company, Cleveland, Ohio; also, Fairway Laboratories, Belleville, Illinois, and Lilly Inc., Indianapolis, Indiana. A representative of the Lilly Inc., yesterday quoted me a price of \$4.50 per thousand for the 16-grain tablets. This is obviously an expensive manner in which to buy common table salt, but the advantage of having a tablet dose will probably be sufficient to justify the extra cost."

Mr. Offord then goes on to say that the administration of salt in tablet form has been adopted by a number of steel and aluminum industries in this country and abroad; that extensive tests have been carried out by Army and Navy of this country and by those of foreign powers.

"Apparently the treatment not only reduces the quantity of drinking water needed by men working under hot, arid conditions, but also reduces muscular fatigue which is ordinarily associated with this type of work. I believe that the idea has real merit and excellent possibilities for fire-fighting work."

We have been leading up to this last sentence. What do you think?
-- E.P.B.

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SIMPLIFIED ABNEY ADJUSTMENT

received from Stewart Udell of Cedar City, Utah.

A very simple and fast method of checking the adjustment of an abney level is to place the instrument on a flat surface, mark its position, level the bubble and read the angle, again place the level on the surface in the same position but with the direction of sight reversed and level the bubble and read. If the readings are the same but on the opposite side of zero the level is properly adjusted.

This test is accurate if the instrument is properly made with the line of sight parallel to the bottom flat surface. The test and adjustment may be made on a table by lamp light or while at work in the field.

